

AERIAL CABLE

INTRODUCTION

All trees in the proximity of any JEA primary lines are trimmed cyclically. Most of this trimming provides sufficient 10 ft clearance, but there are certain locations where the standard clearance cannot be maintained due to a tree's type, preservation status, configuration, position, or growth rate. The foresters are the experts at analyzing these factors. Since standard clearance is encroached in these locations, primary conductors have the potential to sag or sway into the tree. These cases may provide an opportunity to implement aerial cable in order to prevent contact related faults.

Aerial cable is designed only for these cases in order to withstand intermittent brush contact with trees. The covering cannot tolerate continuous tree contact for prolonged periods and will eventually burn up and breakdown under such conditions. Also, the aerial cable will break if an overhanging branch falls on it (just like a bare conductor) and thus is not intended to protect against falling limbs in heavily canopied areas.

For any application other than this, the design engineer ought to receive input from System Analysis and the forester prior to plating or construction.

This Section has been revised to incorporate new design philosophies with respect to aerial cable or "tree" cable. Compact construction using spacers and a supporting messenger is no longer used. The new design uses our standard spacing and construction other than the new plates added to this Section. The old aerial cable standards are still shown in this Section, but they are for reference only and should not be used for new construction.

CONSTRUCTION GUIDELINES

- Aerial cable shall NOT be installed on any insulators other than the polyethylene insulators as shown in these standards. Failure to do this, could cause damage to the conductor insulation and jeopardize the integrity of the installation.
- 2) Only insulated tie-wire (COBTW004) shall be used to tie the conductor to the insulator.
- Arresters shall be used at ALL points where the insulation is stripped away or the conductor is deadended.
- 4) Only 1/0 AAAC is available at this time for construction plate C.1/0SP
- 5) The preferred construction standard for single-phase installations is plate "AE2". This standard uses the fiberglass standoff bracket for improved structure BIL. The standard metal standoff bracket is utilized for multiple phase construction.
- 6) Other construction notes can be found on the plate pages themselves.
- 7) Aerial cable shall NOT be installed where it is in direct contact with trees and other vegetation.
- 8) For new construction and maintenance, aerial cable is not to be used in situations where a recloser is the upstream protective device.

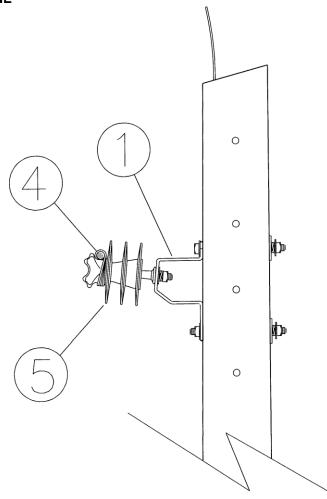


AE1

TANGENT TO 10 DEGREE ANGLE – UNSHIELDED

OPTIONS: 1/0

BOLT PLATE: NONE



NO.	ITEM ID	QTY	DESCRIPTION
1	BKT IN 007	1	BRACKET, INSULATOR STANDOFF 6 IN.
2	BOL DA 015	1	BOLT, DOUBLE ARMING, 3/4X14
3	BOL MS 035	1	BOLT, MACHINE, SQUARE HEAD, 3/4X12
4	COB TW 004	6	CONDUCTOR, TIE WIRE, INSULATED, #4 AL.
5	INS PT 002	1	INSULATOR, PIN TYPE, 35KV, POLYETHYLENE
6	PIN IN 003	1	PIN, SHORT SHANK INSULATOR, 15/35KV, 3/4X7
7	WAS RD 005	5	WASHER, ROUND, 2 INCH, FOR 3/4 IN. DIA. BOLT
8	WAS SF 003	2	WASHER, SQUARE, FLAT, 3 IN., FOR 3/4 IN. DIA. BOLT
9	WAS SP 002	2	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT

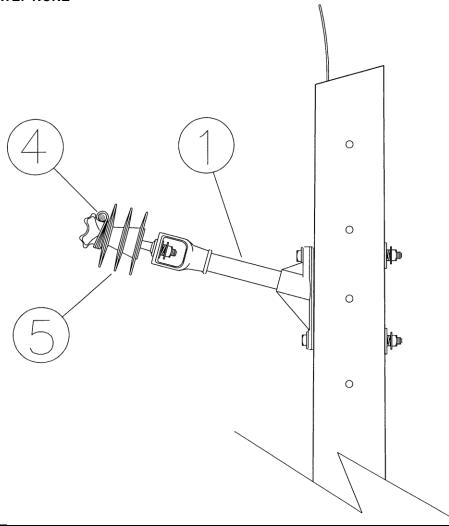


AE2

TANGENT TO 10 DEGREE ANGLE – UNSHIELDED

OPTIONS: 1/0

BOLT PLATE: NONE



NO.	ITEM ID	QTY	DESCRIPTION
1	BKT FS 001	1	BRACKET, FIBERGLASS STANDOFF, 2 INCH ROD
2	BOL DA 015	1	BOLT, DOUBLE ARMING, 3/4X14
3	BOL MS 036	1	BOLT, MACHINE, SQUARE HEAD, 3/4X14
4	COB TW 004	6	CONDUCTOR, TIE WIRE, INSULATED, #4 AL.
5	INS PT 002	1	INSULATOR, PIN TYPE, 35KV, POLYETHYLENE
6	PIN IN 003	1	PIN, SHORT SHANK INSULATOR, 15/35KV, 3/4X7
7	WAS RD 005	5	WASHER, ROUND, 2 INCH, FOR 3/4 IN. DIA. BOLT
8	WAS SF 003	2	WASHER, SQUARE, FLAT, 3 IN., FOR 3/4 IN. DIA. BOLT
9	WAS SP 002	2	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT

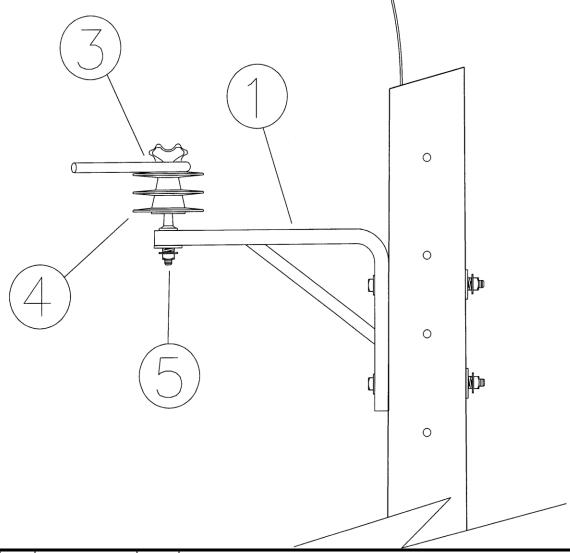


AE3

ANGLE - 10 TO 60 DEGREE ANGLE - UNSHIELDED

OPTIONS: 1/0

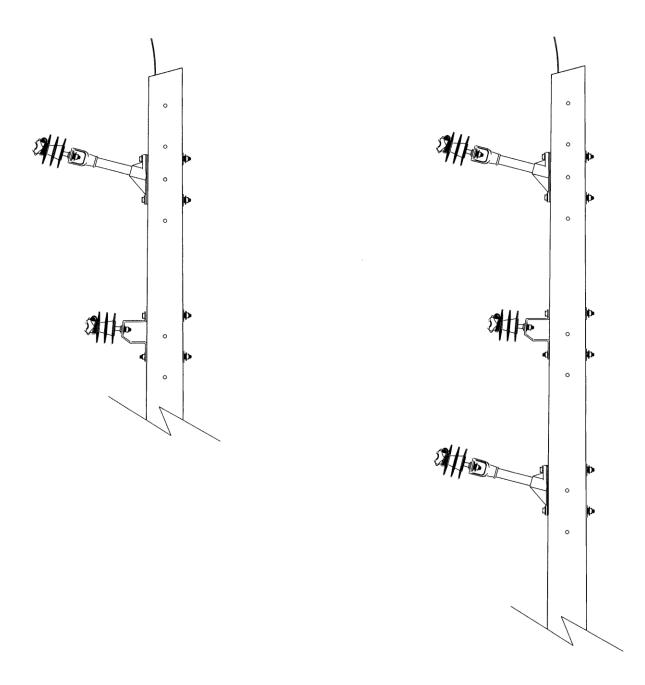
BOLT PLATE: NONE



NO.	ITEM ID	QTY	DESCRIPTION
1	BKT AE 001	1	BRACKET, AERIAL CABLE
2	BOL MS 035	2	BOLT, MACHINE, SQUARE HEAD, 3/4X12
3	COB TW 004	6	CONDUCTOR, TIE WIRE, INSULATED, #4 AL.
4	INS PT 002	1	INSULATOR, PIN TYPE, 35KV, POLYETHYLENE
5	PIN IN 003	1	PIN, SHORT SHANK INSULATOR, 15/35KV, 3/4X7
6	WAS RD 005	5	WASHER, ROUND, 2 INCH, FOR 3/4 IN. DIA. BOLT
7	WAS SF 003	2	WASHER, SQUARE, FLAT, 3 IN., FOR 3/4 IN. DIA. BOLT
8	WAS SP 002	2	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT



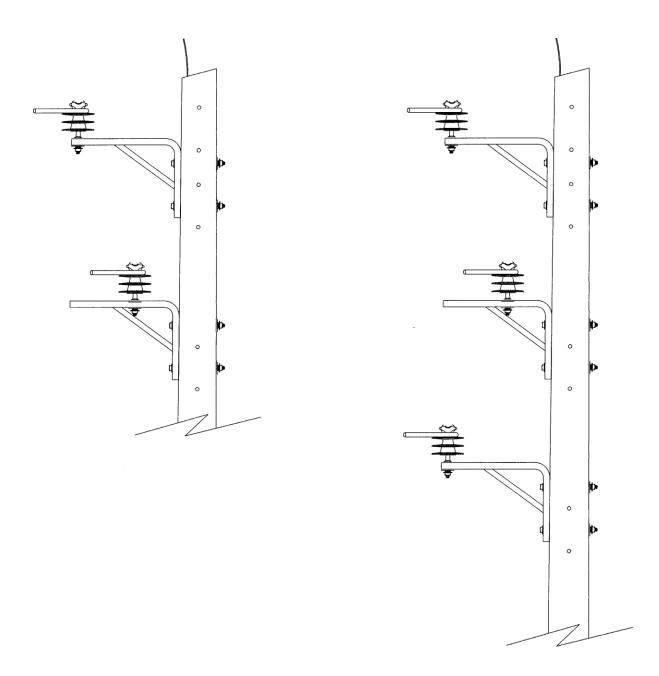
TANGENT TO 10 DEGREE ANGLES - MULTI-PHASES



NOTE: AE1 and AE2 plates are used to create multi-phase structures. Conductor is staggered as shown to help prevent a phase-to-phase current path created by Spanish moss or other debris hanging on the conductor.



ANGLE - 10 TO 60 DEGREE ANGLE - UNSHIELDED



NOTE: AE3 insulator bracket has two insulator mounting points to create multi-phase structures. Conductor is staggered as shown to help prevent a phase-to-phase current path created by Spanish moss or other debris hanging on the conductor.

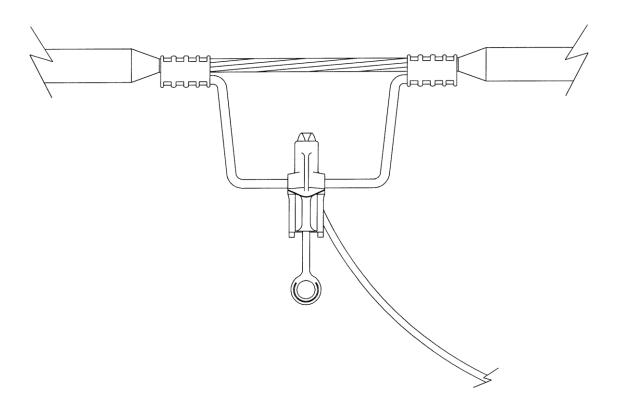


DHLC

HOT-LINE CLAMP FOR AERIAL CABLE

OPTIONS: 1/0

BOLT PLATE: NONE



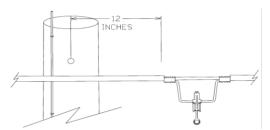
NOTE: Hot-line clamp is the same for normal construction. Remove the insulation as shown or use a stripper to avoid nicking the conductor. Remove only enough insulation in order to install the stirrup. If possible, seal the area between the connector and the insulation with rubber tape covered with 3m "33" pvc tape.

Arresters must be installed wherever the conductor insulation is stripped away or the conductor is deadended.

NO.	ITEM ID	QTY	DESCRIPTION	
1	CLA HL 001	1	HOT-LINE CLAMP, BRONZE 6-1/0	
2	STI CO 001	1	STIRRUP, COMPRESSION, #2-1/0 AL.	



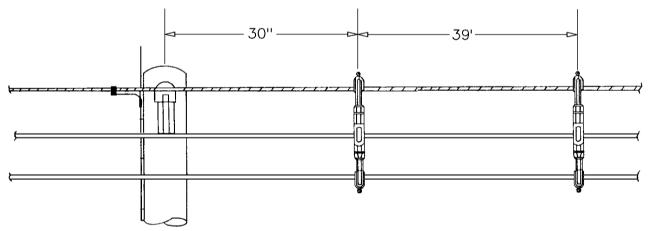
SPACER CABLE INSTALLATION GUIDELINES (FOR MAINTENANCE ONLY)



1. Strip insulation at least 12 inches from pole center for bare connections as shown above. Install "LINE DUC" on conductor at bare location 12 inches beyond bare end. Itemize "LINE DUC" as needed.



2. Install "LINE DUC" on insulated conductor at abrasion locations such as tree limbs or trunk on a per eight foot stick basis as shown above.

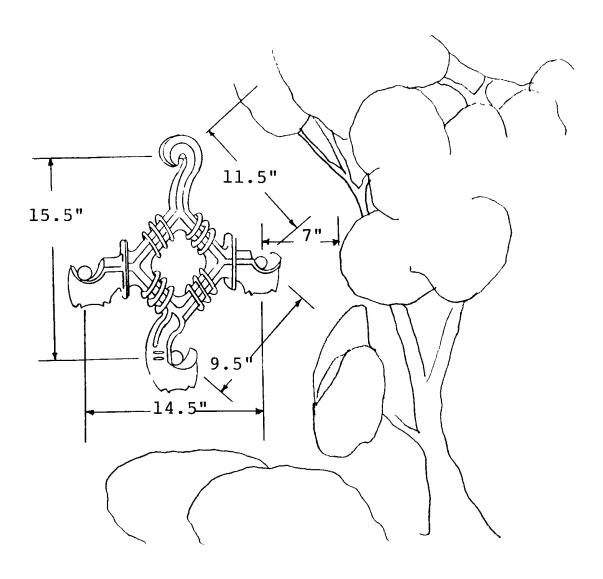


3. Clamp hangers are spaced 39 feet, 39.5 feet, 40 feet, or equidistant between poles. Refer to note #4 on the previous page.



SPACER CABLE INSTALLATION GUIDELINES (FOR MAINTENANCE ONLY)

Aerial cable should not be used to insulate from direct contact to objects such as trees or poles.



Cable insulation is provided to reduce phase to phase, and phase to ground clearances in limited space areas. Do not use in closer proximities than designed for.

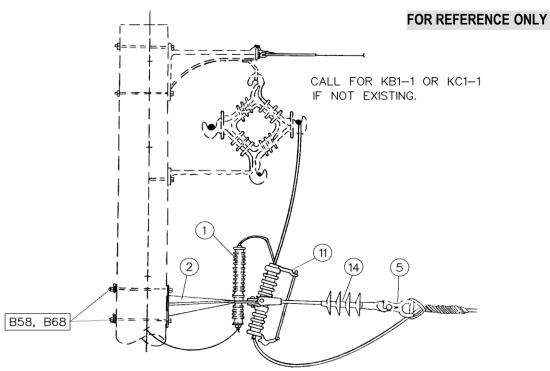


KA20-F

SINGLE-PHASE TAP OFF FRONT OF POLE - SHIELDED

OPTIONS: 2-2, 1/0-2, 1/0-1/0, 2/0-2, 2/0-1/0, 2/0-2/0, 336-2, 336-1/0, 336-2/0

BOLT PLATE: NONE



NO.	ITEM ID	QTY	DESCRIPTION
1	ARR LI 003	1	ARRESTER, LIGHTNING, 21KV, POLYMER
2	BKT IN 001	1	BRACKET, COMBINATION
3	BOL MS 020	2	BOLT, MACHINE, SQUARE HEAD, 5/8X14
4	BOL MS 036	2	BOLT, MACHINE, SQUARE HEAD, 3/4X14
5	CLE TH 001	1	CLEVIS, THIMBLE, 18,000 LBS.
6	CNN CP ***	1	GENERAL CODE FOR CONNECTOR
7	CNN CP 004	1	CONNECTOR, AL. COMP., SIDE-BY, 1/0-2/0 1/0-3/0
8	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 10-2
9	COB CO ***	20	GENERAL CODE FOR CONDUCTOR
10	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
11	CUT OT 004	1	CUTOUT, FUSED, 150KV BIL, 100 AMP, 27KV
12	GRI PR 005	1	GRIP, PREFORMED, 7 NO. 7 AW
13	GUA GW 005	2	GUARD, LINE, 8 FEET, POLY INSULATION, 15KV
14	INS CO 002	1	INSULATOR, DEADEND, POLYMER, 50 IN. EXTENTION
15	NUT SL 003	2	NUT, SQUARE, M-F 5/8
16	NUT SL 004	2	NUT, SQUARE, M-F 3/4
17	NUT TE 001	1	NUT, THIMBLE EYE, 5/8 SINGLE EYE
18	SHA AN 001	1	SHACKLE, ANCHOR, 25,000 LBS.
19	WAS RD 004	2	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
20	WAS RD 005	2	WASHER, ROUND, 2 IN. DIA., FOR 3/4 IN. BOLT
21	WAS SP 002	4	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT



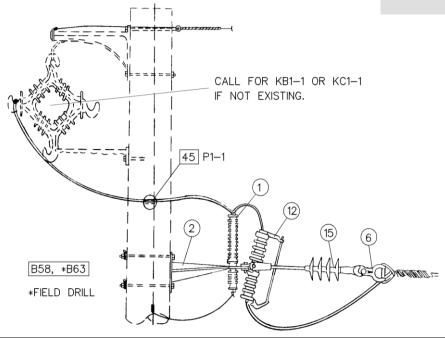
KA20-1F

SINGLE-PHASE TAP OFF BACK OF POLE - SHIELDED

OPTIONS: 2-2, 1/0-2, 2/0-2, 2/0-1/0, 2/0-2/0, 336-2, 336-1/0, 336-2/0

BOLT PLATE: NONE

FOR REFERENCE ONLY



NO.	ITEM ID	QTY	DESCRIPTION
1	ARR LI 003	1	ARRESTER, LIGHTNING, 21KV, POLYMER
2	BKT IN 001	1	BRACKET, COMBINATION
3	BOL DA 015	1	BOLT, DOUBLE ARMING, 3/4X14
4	BOL MS 020	2	BOLT, MACHINE, SQUARE HEAD, 5/8X14
5	BOL MS 036	2	BOLT, MACHINE, SQUARE HEAD, 3/4X14
6	CLE TH 001	1	CLEVIS, THIMBLE, 18,000 LBS.
7	CNN CP ***	1	GENERAL CODE FOR CONNECTOR
8	CNN CP 004	1	CONNECTOR, AL. COMP., SIDE-BY, 1/0-2/0 1/0-3/0
9	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 10-2
10	COB CO ***	20	GENERAL CODE FOR CONDUCTOR
11	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
12	CUT OT 004	1	CUTOUT, FUSED, 150KV BIL, 100 AMP, 27KV
13	GRI PR 005	1	GRIP, PREFORMED, 7 NO. 7 AW
14	GUA GW 005	2	GUARD, LINE, 8 FEET, POLY INSULATION, 15KV
15	INS CO 002	1	INSULATOR, DEADEND, POLYMER, 50 IN. EXTENTION
16	INS VP 001	1	INSULATOR, VERTICAL POST, 34.5KV
17	NUT SL 003	2	NUT, SQUARE, M-F 5/8
18	NUT SL 004	3	NUT, SQUARE, M-F 3/4
19	NUT TE 001	1	NUT, THIMBLE EYE, 5/8 SINGLE EYE
20	SHA AN 001	1	SHACKLE, ANCHOR, 25,000 LBS.
21	WAS RD 004	2	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
22	WAS RD 005	5	WASHER, ROUND, 2 IN. DIA., FOR 3/4 IN. BOLT
23	WAS SP 002	5	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT

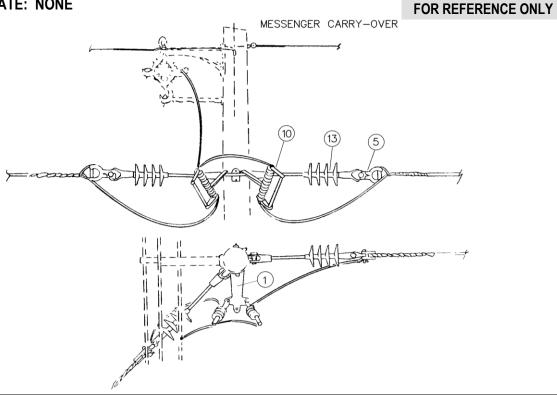


KA22-F

DOUBLE SINGLE-PHASE TAPS

OPTIONS: 2-2, 1/0-2, 1/0-1/0, 2/0-2, 2/0-1/0, 2/0-2/0, 336-2, 336-2/0

BOLT PLATE: NONE



NO.	ITEM ID	QTY	DESCRIPTION
1	BKT IN 001	1	BRACKET, COMBINATION
2	BOL MS 020	3	BOLT, MACHINE, SQUARE HEAD, 5/8X14
3	BOL MS 036	2	BOLT, MACHINE, SQUARE HEAD, 3/4X14
4	CLA SS ***	2	GENERAL CODE FOR STRAIGHT STRAIN CLAMP
5	CLE TH 001	2	CLEVIS, THIMBLE, 18,000 LBS.
6	CNN CP ***	2	GENERAL CODE FOR CONNECTOR
7	CNN CP 004	1	CONNECTOR, AL. COMP., SIDE-BY, 1/0-2/0 1/0-3/0
8	CNN VG 006	1	CONNECTOR, VISE TYPE, 1/0-4/0 10-4/0
9	COB CO ***	20	GENERAL CODE FOR CONDUCTOR
10	CUT OT 004	2	CUTOUT, FUSED, 150KV BIL, 100 AMP, 27KV
11	GRI PR 005	2	GRIP, PREFORMED, 7 NO. 7 AW
12	GUA GW 005	2	GUARD, LINE, 8 FEET, POLY INSULATION, 15KV
13	INS CO 002	2	INSULATOR, DEADEND, POLYMER, 50 IN. EXTENTION
14	NUT EY 003	2	NUT, EYE, 3/4
15	NUT SL 003	3	NUT, SQUARE, M-F 5/8
16	NUT SL 004	2	NUT, SQUARE, M-F 3/4
17	NUT TE 001	2	NUT, THIMBLE EYE, 5/8 SINGLE EYE
18	WAS RD 004	3	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
19	WAS RD 005	2	WASHER, ROUND, 2 IN. DIA., FOR 3/4 IN. BOLT
20	WAS SP 002	5	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT

Revised By: HTH Revised: January 1, 2018 Approved By: BTM

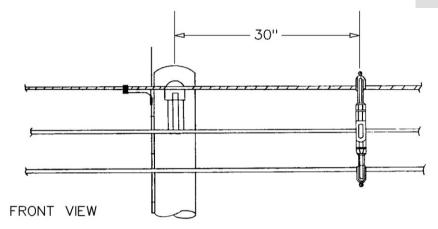


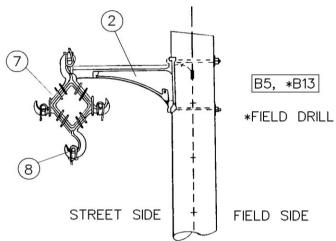
KB₁

0 TO 5 DEGREE ANGLE

OPTIONS: NONE BOLT PLATE: NONE

FOR REFERENCE ONLY





SIDE VIEW

NO.	ITEM ID	QTY	DESCRIPTION
1	BOL MS 020	2	BOLT, MACHINE, SQUARE HEAD, 5/8X14
2	BKT AE 005	1	BRACKET, AERIAL CABLE, 35KV, 14 IN.
3	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
4	CNN CP 005	1	CONNECTOR, AL. COMP., SIDE-BY, 6-2 1/0-2/0
5	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 10-2
6	NUT SL 003	2	NUT, SQUARE, M-F 5/8
7	SPA AC 001	6	SPACER, AERIAL CABLE, 35KV W/O TIES
8	TIE RI 001	18	TIE RING, AERIAL CABLE FOR INSULATOR
9	WAS RD 004	2	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
10	WAS SP 002	2	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT

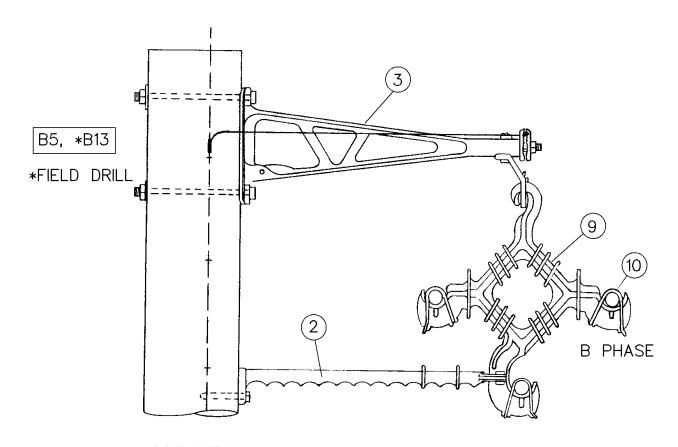


KB1-1

0 TO 5 DEGREE ANGLE WITH ANTI-SWAY BAR

OPTIONS: NONE BOLT PLATE: NONE

FOR REFERENCE ONLY



SIDE VIEW

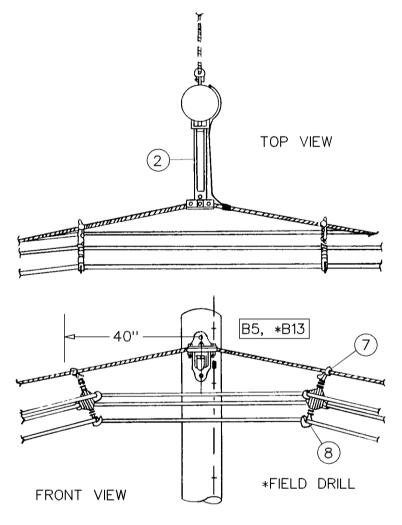
NO.	ITEM ID	QTY	DESCRIPTION
1	BOL MS 020	2	BOLT, MACHINE, SQUARE HEAD, 5/8X14
2	BKT AE 003	1	BRACKET, ANTI-SWAY, 24 IN. WITH STIRRUP
3	BKT AE 006	1	BRACKET, AERIAL CABLE, 35KV 24 IN.
4	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
5	CNN CP 005	1	CONNECTOR, AL. COMP., SIDE-BY, 6-2 1/0-2/0
6	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 10-2
7	NUT SL 003	2	NUT, SQUARE, M-F 5/8
8	SCW LA 002	1	SCREW, LAG, 1/2 IN. X 4 IN.
9	SPA AC 001	6	SPACER, AERIAL CABLE, 35KV W/O TIES
10	TIE RI 001	18	TIE RING, AERIAL CABLE FOR INSULATOR
11	WAS RD 004	2	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
12	WAS SP 002	2	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT



5 TO 10 DEGREE ANGLE

OPTIONS: NONE BOLT PLATE: NONE

FOR REFERENCE ONLY



NO.	ITEM ID	QTY	DESCRIPTION
1	BOL MS 020	2	BOLT, MACHINE, SQUARE HEAD, 5/8X14
2	BKT AE 005	1	BRACKET, AERIAL CABLE, 35KV, 14 IN.
3	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
4	CNN CP 005	1	CONNECTOR, AL. COMP., SIDE-BY, 6-2 1/0-2/0
5	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 10-2
6	NUT SL 003	2	NUT, SQUARE, M-F 5/8
7	SPA AC 001	6	SPACER, AERIAL CABLE, 35KV W/O TIES
8	TIE RI 001	18	TIE RING, AERIAL CABLE FOR INSULATOR
9	WAS RD 004	2	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
10	WAS SP 002	2	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT

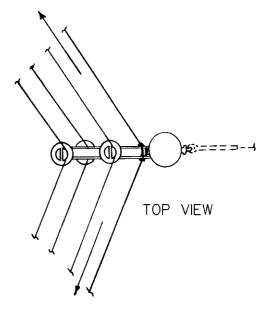


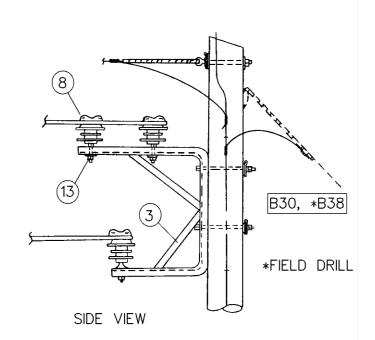
10 TO 60 DEGREE ANGLE

OPTIONS: NONE BOLT PLATE: NONE

FOR REFERENCE ONLY







SPACER 40 FEET AWAY

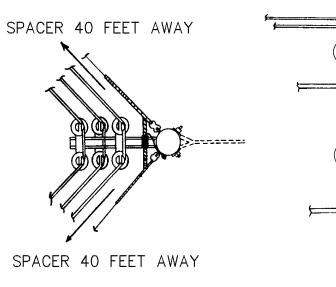
NO.	ITEM ID	QTY	DESCRIPTION
1	BOL MS 020	2	BOLT, MACHINE, SQUARE HEAD, 5/8X14
2	BOL MS 034	1	BOLT, MACHINE, SQUARE HEAD, 3/4X10
3	BKT AE 001	1	BRACKET, AERIAL CABLE, 35KV, 0-90 DEGREE
4	CLA AN 001	1	CLAMP, ANGLE, 4 SOL 250 KCM
5	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
6	CNN CP 005	1	CONNECTOR, AL. COMP., SIDE-BY, 6-2 1/0-2/0
7	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 10-2
8	INS PT 002	2	INSULATOR, PIN TYPE, 35KV, POLYETHYLENE
9	GUA LI 005	1	LINE GUARD, 7 NO. 7 AW
10	NUT SL 003	2	LOCKNUT, SQUARE M-F 5/8
11	NUT SL 004	1	LOCKNUT, SQUARE M-F 3/4
12	NUT EY 003	1	NUT, EYE 3/4
13	PIN IN 003	2	PIN, SHORT SHANK INSULATOR, 15/35KV, 3/4X7
14	SPA AC 001	6	SPACER, AERIAL CABLE, 35KV W/O TIES
15	TIE RI 001	18	TIE RING, AERIAL CABLE FOR INSULATOR
16	TIE RI 002	2	TIE RING, AERIAL CABLE FOR SPACER
17	WAS RD 004	2	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
18	WAS RD 005	2	WASHER, ROUND, 2 IN. DIA., FOR 3/4 IN. BOLT
19	WAS SP 002	2	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT

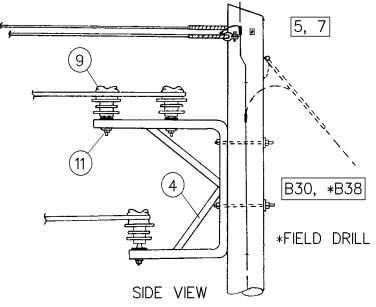


60 TO 90 DEGREE ANGLE

OPTIONS: NONE BOLT PLATE: NONE

FOR REFERENCE ONLY





TOP	VIEW

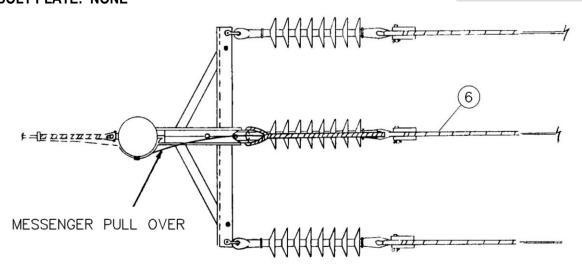
NO.	ITEM ID	QTY	DESCRIPTION
1	ADP AC 001	2	ADAPTER PLATE, USE WITH BKT AE 001 ON 60-90 DEGREE ANGLES
2	BOL MS 020	2	BOLT, MACHINE, SQUARE HEAD, 5/8X14
3	BOL MS 034	2	BOLT, MACHINE, SQUARE HEAD, 3/4X10
4	BKT AE 001	1	BRACKET, AERIAL CABLE, 35KV, 0-90 DEGREE
5	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
6	CNN CP 005	1	CONNECTOR, AL. COMP., SIDE-BY, 6-2 1/0-2/0
7	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 10-2
8	GRI PR 005	2	GRIP, PREFORMED, 7 NO. 7 AW
9	INS PT 002	4	INSULATOR, PIN TYPE, 35KV, POLYETHYLENE
10	NUT SL 004	2	LOCKNUT, SQUARE M-F 3/4
11	PIN IN 003	4	PIN, SHORT SHANK INSULATOR, 15/35KV, 3/4X7
12	SPA AC 001	6	SPACER, AERIAL CABLE, 35KV W/O TIES
13	THI EY 001	2	THIMBLE EYELET, 3/4
14	TIE RI 001	18	TIE RING, AERIAL CABLE FOR INSULATOR
15	TIE RI 002	4	TIE RING, AERIAL CABLE FOR SPACER
16	WAS RD 004	4	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
17	WAS RD 005	4	WASHER, ROUND, 2 IN. DIA., FOR 3/4 IN. BOLT
18	WAS SP 002	4	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT



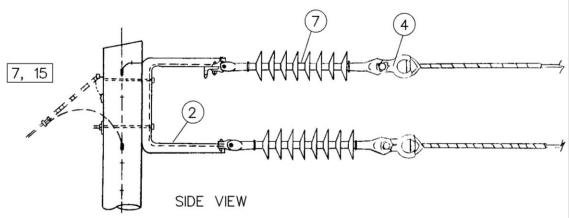
DEADEND

OPTIONS: 2, 1/0, 2/0, 336 BOLT PLATE: NONE

FOR REFERENCE ONLY



TOP VIEW

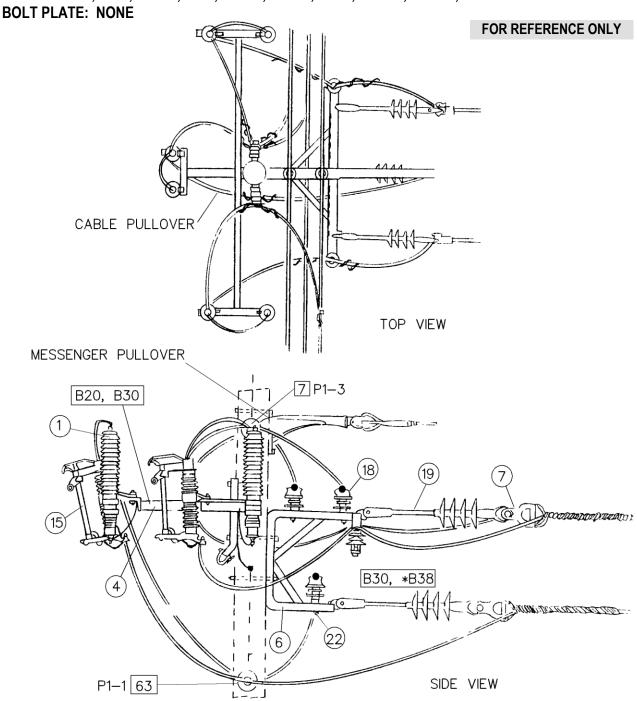


NO.	ITEM ID	QTY	DESCRIPTION
1	BOL MS 020	2	BOLT, MACHINE, SQUARE HEAD, 5/8X14
2	BKT AE 004	1	BRACKET, AERIAL CABLE, DEADEND
3	CLA SS ***	2	GENERAL CODE FOR STRAIGHT STRAIN CLAMP
4	CLE TH 001	3	CLEVIS, THIMBLE, 18,000 LBS.
5	CNN VG 005	1	CONNECTOR, VISE TYPE, 2-2/0 10-2/0
6	GRI PR 005	1	GRIP, PREFORMED, 7 NO. 7 AW
7	INS CO 002	2	INSULATOR, DEADEND, POLYMER
8	NUT SL 003	2	LOCKNUT, SQUARE M-F 5/8
9	SHA AN 001	2	SHACKLE, ANCHOR, 25,000 LBS.
10	SPA AC 001	3	SPACER, AERIAL CABLE, 35KV W/O TIES
11	TIE RI 001	9	TIE RING, AERIAL CABLE FOR INSULATOR
12	WAS RD 004	4	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
13	WAS SP 002	2	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT



0 TO 5 DEGREE FUSED TAP OFF FRONT OF POLE

OPTIONS: 2-2, 1/0-2, 1/0-1/0, 2/0-2, 2/0-1/0, 2/0-2/0, 336-2, 336-1/0, 336-2/0, 336-336





KB20 MATERIAL LIST

FOR REFERENCE ONLY

NO.	ITEM ID	QTY	DESCRIPTION
1	ARR LI 003	2	ARRESTER, LIGHTNING, 21KV, POLYMER
2	BOL MS 020	5	BOLT, MACHINE, SQUARE HEAD, 5/8X14
3	BOL DA 002	1	BOLT, DOUBLE ARMING, 5/8X14
4	BKT AC 002	1	BRACKET, TRI-MOUNT ARRESTER AND CUTOUT
5	BKT AE 005	1	BRACKET, AERIAL CABLE, 35KV, 14 IN.
6	BKT AE 007	1	BRACKET, AERIAL CABLE, 35KV, TANGENT/3-PHASE TAP
7	CLE TH 001	3	CLEVIS, THIMBLE, 18,000 LBS.
8	CNN CP ***	2	GENERAL CODE FOR CONNECTOR
9	CNN CP 004	1	CONNECTOR, AL. COMP., SIDE-BY, 1/0-2/0 1/0-3/0
10	CNN CP 008	1	CONNECTOR, AL. COMP., SIDE-BY, 6-2 3/0-4/0
11	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 10-2
12	CNN VG 005	1	CONNECTOR, VISE TYPE, 2-2/0 10-2/0
13	COB CO ***	10	GENERAL CODE FOR CONDUCTOR
14	COB CO 028	10	CONDUCTOR, COPPER, #4 SOFT DRAWN
15	CUT OT 004	2	CUTOUT, FUSED, 150KV BIL, 100 AMP, 27KV
16	GRI PR005	1	GRIP, PREFORMED, 7 NO. 7 AW
17	INS VP 001	2	INSULATOR, VERTICAL POST, 34.5KV
18	INS PT 002	3	INSULATOR, PIN TYPE, 35KV, POLYETHYLENE
19	INS CO 002	2	INSULATOR, DEADEND, POLYMER
20	NUT SL 003	6	LOCKNUT, SQUARE M-F 5/8
21	NUT EY 002	1	NUT, EYE 5/8
22	PIN IN 003	3	PIN, SHORT SHANK INSULATOR, 15/35KV, 3/4X7
23	SHA AN 001	2	SHACKLE, ANCHOR, 25,000 LBS.
24	SPA AC 001	6	SPACER, AERIAL CABLE, 35KV W/O TIES
25	TIE RI 001	18	TIE RING, AERIAL CABLE FOR INSULATOR
26	TIE RI 002	4	TIE RING, AERIAL CABLE FOR SPACER
27	WAS RD 004	5	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
28	WAS SP 002	5	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT

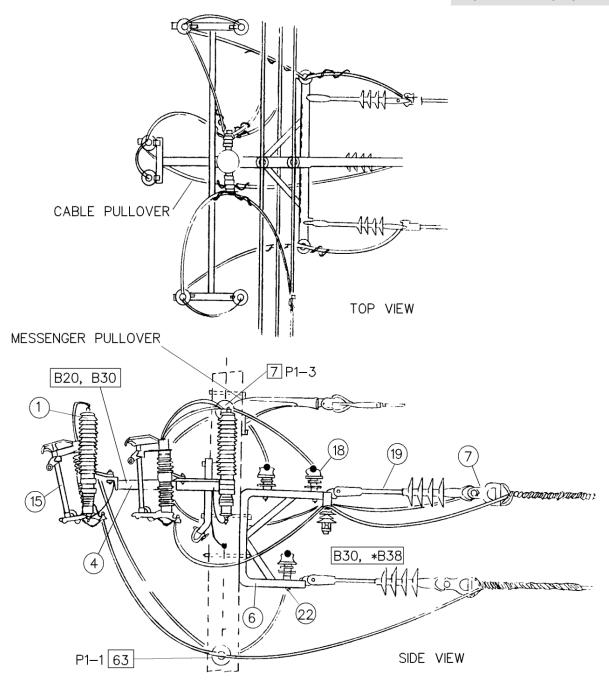


KB20-1

0 TO 5 DEGREE FUSED TAP OFF BACK OF POLE

OPTIONS: 2-2, 1/0-2, 1/0-1/0, 2/0-2, 2/0-1/0, 2/0-2/0, 336-2, 336-1/0, 336-2/0, 336-336

BOLT PLATE: NONE FOR REFERENCE ONLY





KB20-1 MATERIAL LIST

FOR REFERENCE ONLY

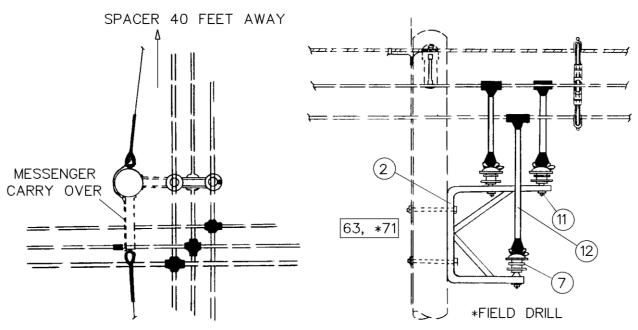
NO.	ITEM ID	QTY	DESCRIPTION
1	ARR LI 003	2	ARRESTER, LIGHTNING, 21KV, POLYMER
2	BOL MS 020	6	BOLT, MACHINE, SQUARE HEAD, 5/8X14
3	BOL DA 002	1	BOLT, DOUBLE ARMING, 5/8X14
4	BKT AC 002	1	BRACKET, TRI-MOUNT ARRESTER AND CUTOUT
5	BKT AE 003	1	BRACKET, ANTI-SWAY, 24 IN. WITH STIRRUP
6	BKT AE 004	1	BRACKET, AERIAL CABLE, DEADEND
7	BKT AE 006	1	BRACKET, AERIAL CABLE, 35KV 24 IN.
8	CLE TH 001	3	CLEVIS, THIMBLE, 18,000 LBS.
9	CNN CP ***	2	GENERAL CODE FOR CONNECTOR
10	CNN CP 005	1	CONNECTOR, AL. COMP., SIDE-BY, 6-2 1/0-2/0
11	CNN CP 008	1	CONNECTOR, AL. COMP., SIDE-BY, 6-2 3/0-4/0
12	CNN VG 003	2	CONNECTOR, VISE TYPE, 6-2 10-2
13	CNN VG 005	2	CONNECTOR, VISE TYPE, 2-2/0 10-2/0
14	COB CO ***	12	GENERAL CODE FOR CONDUCTOR
15	COB CO 028	12	CONDUCTOR, COPPER, #4 SOFT DRAWN
16	CUT OT 004	2	CUTOUT, FUSED, 150KV BIL, 100 AMP, 27KV
17	GRI PR005	1	GRIP, PREFORMED, 7 NO. 7 AW
18	INS VP 001	2	INSULATOR, VERTICAL POST, 34.5KV
19	INS CO 002	2	INSULATOR, DEADEND, POLYMER
20	NUT SL 003	6	LOCKNUT, SQUARE M-F 5/8
21	SCW LA 002	1	SCREW, LAG, 1/2X4
22	SHA AN 001	3	SHACKLE, ANCHOR, 25,000 LBS.
23	SPA AC 001	7	SPACER, AERIAL CABLE, 35KV W/O TIES
24	TIE RI 001	21	TIE RING, AERIAL CABLE FOR INSULATOR
25	TIE RI 002	2	TIE RING, AERIAL CABLE FOR SPACER
26	WAS RD 004	6	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
27	WAS SP 002	6	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT



0 TO 5 DEGREE CROSS

OPTIONS: 2-2, 1/0-2, 1/0-1/0, 2/0-2, 2/0-1/0, 2/0-2/0, 336-2, 336-1/0, 336-2/0, 336-336

BOLT PLATE: NONE FOR REFERENCE ONLY



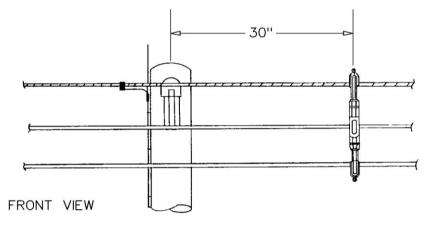
NO.	ITEM ID	QTY	DESCRIPTION
1	BOL MS 020	2	BOLT, MACHINE, SQUARE HEAD, 5/8X14
2	BKT AE 001	1	BRACKET, AERIAL CABLE, DEADEND
3	CNN CP ***	4	GENERAL CODE FOR CONNECTOR
4	CNN CP 004	2	CONNECTOR, AL. COMP., SIDE-BY,
5	CNN VG 006	1	CONNECTOR, VISE TYPE, 1/0-4/0 10-4/0
6	GRI PR 005	1	GRIP, PREFORMED, 7 NO. 7 AW
7	INS PT 002	2	INSULATOR, PIN TYPE, 35KV, POLYETHYLENE
8	NUT SL 003	2	LOCKNUT, SQUARE M-F 5/8
9	NUT TE 001	1	NUT, THIMBLE EYE, 5/8, SINGLE EYE
10	NUT TE 002	1	NUT, THIMBLE EYE, 3/4, SINGLE EYE
11	PIN IN 003	2	PIN, SHORT SHANK INSULATOR, 15/35KV, 3/4X7
12	SPA AC 001	6	SPACER, AERIAL CABLE, 35KV W/O TIES
13	TIE RI 001	18	TIE RING, AERIAL CABLE FOR INSULATOR
14	TIE RI 02	2	TIE RING, AERIAL CABLE FOR SPACER
15	WAS RD 004	4	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
16	WAS SP 002	2	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT

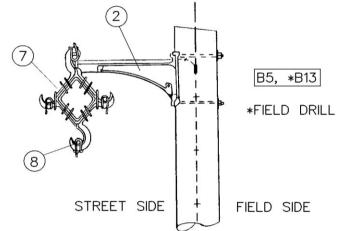


0 TO 5 DEGREE ANGLE

OPTIONS: NONE BOLT PLATE: NONE

FOR REFERENCE ONLY





SIDE VIEW

NO.	ITEM ID	QTY	DESCRIPTION
1	BOL MS 020	2	BOLT, MACHINE, SQUARE HEAD, 5/8X14
2	BKT AE 005	1	BRACKET, AERIAL CABLE, 35KV, 14 IN.
3	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
4	CNN CP 005	1	CONNECTOR, AL. COMP., SIDE-BY, 6-2 1/0-2/0
5	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 10-2
6	NUT SL 003	2	NUT, SQUARE, M-F 5/8
7	SPA AC 001	6	SPACER, AERIAL CABLE, 35KV W/O TIES
8	TIE RI 001	24	TIE RING, AERIAL CABLE FOR INSULATOR
9	WAS RD 004	2	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
10	WAS SP 002	2	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT

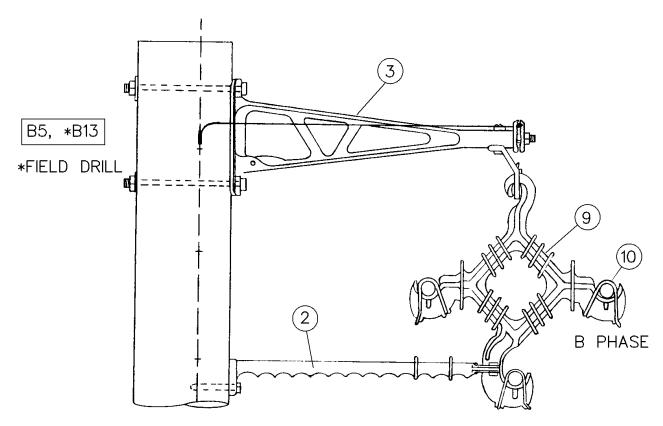


KC1-1

0 TO 5 DEGREE ANGLE WITH ANTI-SWAY BAR

OPTIONS: NONE BOLT PLATE: NONE

FOR REFERENCE ONLY



SIDE VIEW

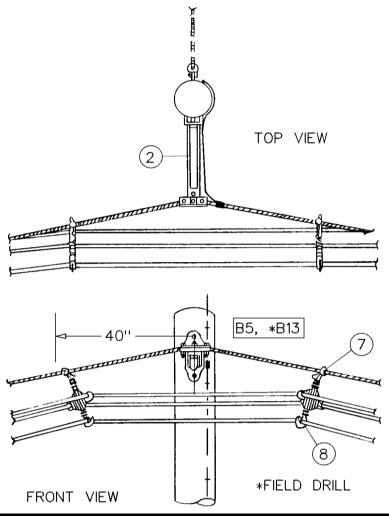
NO.	ITEM ID	QTY	DESCRIPTION
1	BOL MS 020	2	BOLT, MACHINE, SQUARE HEAD, 5/8X14
2	BKT AE 003	1	BRACKET, ANTI-SWAY, 24 IN. WITH STIRRUP
3	BKT AE 006	1	BRACKET, AERIAL CABLE, 35KV 24 IN.
4	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
5	CNN CP 005	1	CONNECTOR, AL. COMP., SIDE-BY, 6-2 1/0-2/0
6	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 10-2
7	NUT SL 003	2	NUT, SQUARE, M-F 5/8
8	SCW LA 002	1	SCREW, LAG, 1/2 IN. X 4 IN.
9	SPA AC 001	6	SPACER, AERIAL CABLE, 35KV W/O TIES
10	TIE RI 001	24	TIE RING, AERIAL CABLE FOR INSULATOR
11	WAS RD 004	2	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
12	WAS SP 002	2	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT



5 TO 10 DEGREE ANGLE

OPTIONS: NONE BOLT PLATE: NONE

FOR REFERENCE ONLY



NO.	ITEM ID	QTY	DESCRIPTION
1	BOL MS 020	2	BOLT, MACHINE, SQUARE HEAD, 5/8X14
2	BKT AE 005	1	BRACKET, AERIAL CABLE, 35KV, 14 IN.
3	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
4	CNN CP 005	1	CONNECTOR, AL. COMP., SIDE-BY, 6-2 1/0-2/0
5	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 10-2
6	NUT SL 003	2	NUT, SQUARE, M-F 5/8
7	SPA AC 001	6	SPACER, AERIAL CABLE, 35KV W/O TIES
8	TIE RI 001	24	TIE RING, AERIAL CABLE FOR INSULATOR
9	WAS RD 004	2	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
10	WAS SP 002	2	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT

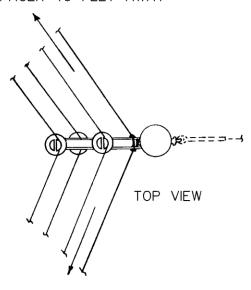


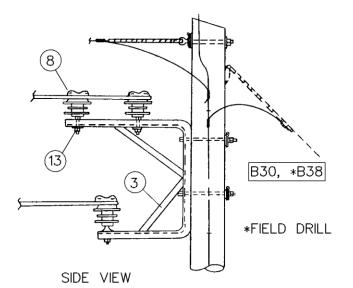
10 TO 60 DEGREE ANGLE

OPTIONS: NONE BOLT PLATE: NONE

FOR REFERENCE ONLY

SPACER 40 FEET AWAY





SPACER 40 FEET AWAY

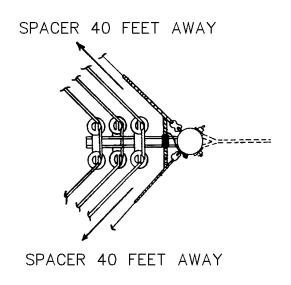
NO.	ITEM ID	QTY	DESCRIPTION
1	BOL MS 020	2	BOLT, MACHINE, SQUARE HEAD, 5/8X14
2	BOL MS 034	1	BOLT, MACHINE, SQUARE HEAD, 3/4X10
3	BKT AE 001	1	BRACKET, AERIAL CABLE, 35KV, 0-90 DEGREE
4	CLA AN 001	1	CLAMP, ANGLE, 4 SOL 250 KCM
5	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
6	CNN CP 005	1	CONNECTOR, AL. COMP., SIDE-BY, 6-2 1/0-2/0
7	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 10-2
8	INS PT 002	3	INSULATOR, PIN TYPE, 35KV, POLYETHYLENE
9	GUA LI 005	1	LINE GUARD, 7 NO. 7 AW
10	NUT SL 003	2	LOCKNUT, SQUARE M-F 5/8
11	NUT SL 004	1	LOCKNUT, SQUARE M-F 3/4
12	NUT EY 003	1	NUT, EYE 3/4
13	PIN IN 003	3	PIN, SHORT SHANK INSULATOR, 15/35KV, 3/4X7
14	SPA AC 001	6	SPACER, AERIAL CABLE, 35KV W/O TIES
15	TIE RI 001	24	TIE RING, AERIAL CABLE FOR INSULATOR
16	TIE RI 002	3	TIE RING, AERIAL CABLE FOR SPACER
17	WAS RD 004	2	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
18	WAS RD 005	8	WASHER, ROUND, 2 IN. DIA., FOR 3/4 IN. BOLT
19	WAS SP 002	4	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT

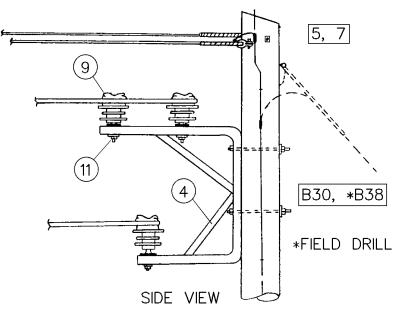


60 TO 90 DEGREE ANGLE

OPTIONS: NONE BOLT PLATE: NONE

FOR REFERENCE ONLY





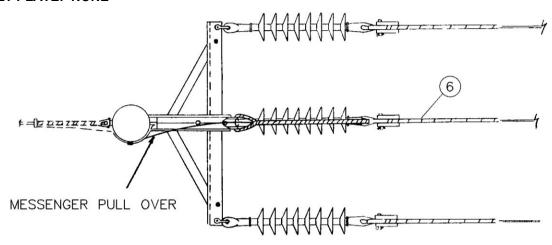
NO.	ITEM ID	QTY	DESCRIPTION
1	ADP AC 001	3	ADAPTER PLATE, USE WITH BKT AE 001 ON 60-90 DEGREE ANGLES
2	BOL MS 020	2	BOLT, MACHINE, SQUARE HEAD, 5/8X14
3	BOL MS 034	2	BOLT, MACHINE, SQUARE HEAD, 3/4X10
4	BKT AE 001	1	BRACKET, AERIAL CABLE, 35KV, 0-90 DEGREE
5	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
6	CNN CP 005	1	CONNECTOR, AL. COMP., SIDE-BY, 6-2 1/0-2/0
7	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 10-2
8	GRI PR 005	2	GRIP, PREFORMED, 7 NO. 7 AW
9	INS PT 002	6	INSULATOR, PIN TYPE, 35KV, POLYETHYLENE
10	NUT SL 004	2	LOCKNUT, SQUARE M-F 3/4
11	PIN IN 003	6	PIN, SHORT SHANK INSULATOR, 15/35KV, 3/4X7
12	SPA AC 001	6	SPACER, AERIAL CABLE, 35KV W/O TIES
13	THI EY 001	2	THIMBLE EYELET, 3/4
14	TIE RI 001	24	TIE RING, AERIAL CABLE FOR INSULATOR
15	TIE RI 002	6	TIE RING, AERIAL CABLE FOR SPACER
16	WAS RD 004	2	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
17	WAS RD 005	2	WASHER, ROUND, 2 IN. DIA., FOR 3/4 IN. BOLT
18	WAS SP 002	4	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT



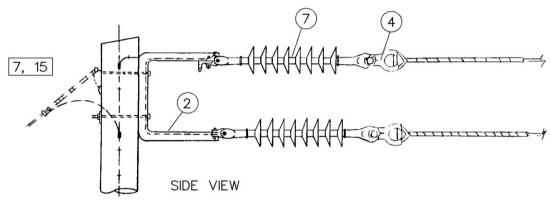
DEADEND

OPTIONS: 2, 1/0, 2/0, 336 BOLT PLATE: NONE

FOR REFERENCE ONLY



TOP VIEW

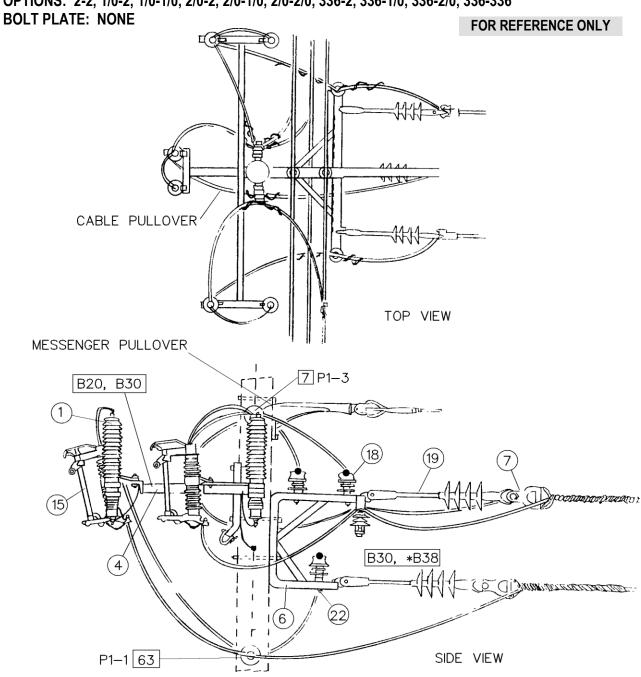


NO.	ITEM ID	QTY	DESCRIPTION
1	BOL MS 020	2	BOLT, MACHINE, SQUARE HEAD, 5/8X14
2	BKT AE 004	1	BRACKET, AERIAL CABLE, DEADEND
3	CLA SS ***	3	GENERAL CODE FOR STRAIGHT STRAIN CLAMP
4	CLE TH 001	3	CLEVIS, THIMBLE, 18,000 LBS.
5	CNN VG 005	1	CONNECTOR, VISE TYPE, 2-2/0 10-2/0
6	GRI PR 005	1	GRIP, PREFORMED, 7 NO. 7 AW
7	INS CO 002	3	INSULATOR, DEADEND, POLYMER
8	NUT SL 003	2	LOCKNUT, SQUARE M-F 5/8
9	SHA AN 001	3	SHACKLE, ANCHOR, 25,000 LBS.
10	SPA AC 001	3	SPACER, AERIAL CABLE, 35KV W/O TIES
11	TIE RI 001	12	TIE RING, AERIAL CABLE FOR INSULATOR
12	WAS RD 004	2	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
13	WAS SP 002	2	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT



0 TO 5 DEGREE FUSED TAP OFF FRONT OF POLE

OPTIONS: 2-2, 1/0-2, 1/0-1/0, 2/0-2, 2/0-1/0, 2/0-2/0, 336-2, 336-1/0, 336-2/0, 336-336





KC20 MATERIAL LIST

FOR REFERENCE ONLY

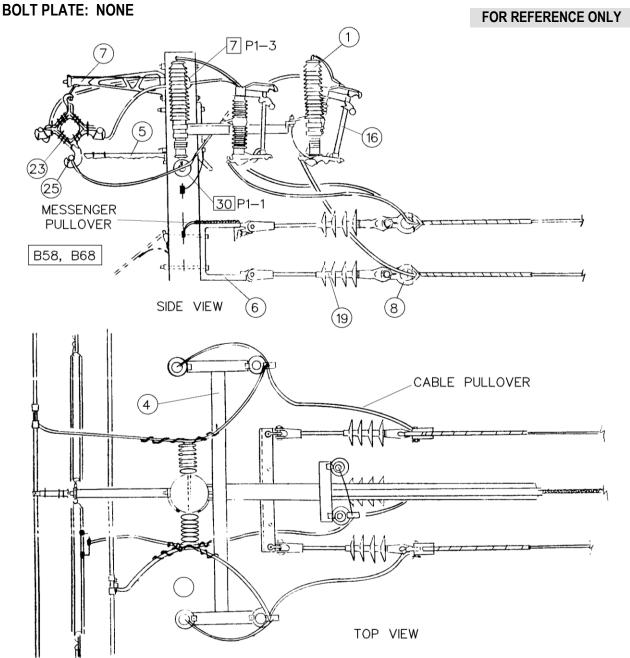
NO.	ITEM ID	QTY	DESCRIPTION
1	ARR LI 003	2	ARRESTER, LIGHTNING, 21KV, POLYMER
2	BOL MS 020	7	BOLT, MACHINE, SQUARE HEAD, 5/8X14
3	BOL DA 002	2	BOLT, DOUBLE ARMING, 5/8X14
4	BKT AC 002	1	BRACKET, TRI-MOUNT ARRESTER AND CUTOUT
5	BKT AE 005	1	BRACKET, AERIAL CABLE, 35KV, 14 IN.
6	BKT AE 007	1	BRACKET, AERIAL CABLE, 35KV, TANGENT/3-PHASE TAP
7	CLE TH 001	4	CLEVIS, THIMBLE, 18,000 LBS.
8	CNN CP ***	3	GENERAL CODE FOR CONNECTOR
9	CNN CP 004	1	CONNECTOR, AL. COMP., SIDE-BY, 1/0-2/0 1/0-3/0
10	CNN CP 008	1	CONNECTOR, AL. COMP., SIDE-BY, 6-2 3/0-4/0
11	CNN VG 003	1	CONNECTOR, VISE TYPE, 6-2 10-2
12	CNN VG 005	1	CONNECTOR, VISE TYPE, 2-2/0 10-2/0
13	COB CO ***	1	GENERAL CODE FOR CONDUCTOR
14	COB CO 028	3	CONDUCTOR, COPPER, #4 SOFT DRAWN
15	CUT OT 004	3	CUTOUT, FUSED, 150KV BIL, 100 AMP, 27KV
16	GRI PR 005	1	GRIP, PREFORMED, 7 NO. 7 AW
17	INS VP 001	4	INSULATOR, VERTICAL POST, 34.5KV
18	INS PT 002	5	INSULATOR, PIN TYPE, 35KV, POLYETHYLENE
19	INS CO 002	3	INSULATOR, DEADEND, POLYMER
20	NUT SL 003	7	LOCKNUT, SQUARE M-F 5/8
21	NUT EY 002	1	NUT, EYE 5/8
22	PIN IN 003	4	PIN, SHORT SHANK INSULATOR, 15/35KV, 3/4X7
23	SHA AN 001	3	SHACKLE, ANCHOR, 25,000 LBS.
24	SPA AC 001	6	SPACER, AERIAL CABLE, 35KV W/O TIES
25	TIE RI 001	24	TIE RING, AERIAL CABLE FOR INSULATOR
26	TIE RI 002	6	TIE RING, AERIAL CABLE FOR SPACER
27	WAS RD 004	5	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
28	WAS SP 002	5	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT



KC20-1

0 TO 5 DEGREE FUSED TAP OFF BACK OF POLE

OPTIONS: 2-2, 1/0-2, 1/0-1/0, 2/0-2, 2/0-1/0, 2/0-2/0, 336-2, 336-1/0, 336-2/0, 336-336





KC20-1 MATERIAL LIST

FOR REFERENCE ONLY

NO.	ITEM ID	QTY	DESCRIPTION
1	ARR LI 003	2	ARRESTER, LIGHTNING, 21KV, POLYMER
2	BOL MS 020	6	BOLT, MACHINE, SQUARE HEAD, 5/8X14
3	BOL DA 002	1	BOLT, DOUBLE ARMING, 5/8X14
4	BKT AC 002	1	BRACKET, TRI-MOUNT ARRESTER AND CUTOUT
5	BKT AE 003	1	BRACKET, ANTI-SWAY, 24 IN. WITH STIRRUP
6	BKT AE 004	1	BRACKET, AERIAL CABLE, DEADEND
7	BKT AE 006	1	BRACKET, AERIAL CABLE, 35KV 24 IN.
8	CLE TH 001	4	CLEVIS, THIMBLE, 18,000 LBS.
9	CNN CP ***	3	GENERAL CODE FOR CONNECTOR
10	CNN CP 005	1	CONNECTOR, AL. COMP., SIDE-BY, 6-2 1/0-2/0
11	CNN CP 008	1	CONNECTOR, AL. COMP., SIDE-BY, 6-2 3/0-4/0
12	CNN VG 003	2	CONNECTOR, VISE TYPE, 6-2 10-2
13	CNN VG 005	2	CONNECTOR, VISE TYPE, 2-2/0 10-2/0
14	COB CO ***	18	GENERAL CODE FOR CONDUCTOR
15	COB CO 028	12	CONDUCTOR, COPPER, #4 SOFT DRAWN
16	CUT OT 004	3	CUTOUT, FUSED, 150KV BIL, 100 AMP, 27KV
17	GRI PR 005	1	GRIP, PREFORMED, 7 NO. 7 AW
18	INS VP 001	3	INSULATOR, VERTICAL POST, 34.5KV
19	INS CO 002	3	INSULATOR, DEADEND, POLYMER
20	NUT SL 003	6	LOCKNUT, SQUARE M-F 5/8
21	SCW LA 002	1	SCREW, LAG, 1/2X4
22	SHA AN 001	4	SHACKLE, ANCHOR, 25,000 LBS.
23	SPA AC 001	7	SPACER, AERIAL CABLE, 35KV W/O TIES
24	TIE RI 001	27	TIE RING, AERIAL CABLE FOR INSULATOR
25	TIE RI 002	3	TIE RING, AERIAL CABLE FOR SPACER
26	WAS RD 004	6	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
27	WAS SP 002	6	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT





0 TO 5 DEGREE CROSS

OPTIONS: 2-2, 1/0-2, 1/0-1/0, 2/0-2, 2/0-1/0, 2/0-2/0, 336-2, 336-1/0, 336-2/0, 336-336

BOLT PLATE: NONE FOR REFERENCE ONLY

NO.	ITEM ID	QTY	DESCRIPTION
1	BOL MS 020	2	BOLT, MACHINE, SQUARE HEAD, 5/8X14
2	BKT AE 001	1	BRACKET, AERIAL CABLE, DEADEND
3	CNN CP ***	6	GENERAL CODE FOR CONNECTOR
4	CNN CP 004	2	CONNECTOR, AL. COMP., SIDE-BY,
5	CNN VG 006	1	CONNECTOR, VISE TYPE, 1/0-4/0 10-4/0
6	GRI PR 005	2	GRIP, PREFORMED, 7 NO. 7 AW
7	INS PT 002	3	INSULATOR, PIN TYPE, 35KV, POLYETHYLENE
8	NUT SL 003	2	LOCKNUT, SQUARE M-F 5/8
9	NUT TE 001	1	NUT, THIMBLE EYE, 5/8, SINGLE EYE
10	NUT TE 002	1	NUT, THIMBLE EYE, 3/4, SINGLE EYE
11	PIN IN 003	3	PIN, SHORT SHANK INSULATOR, 15/35KV, 3/4X7
12	SPA AC 001	6	SPACER, AERIAL CABLE, 35KV W/O TIES
13	TIE RI 001	24	TIE RING, AERIAL CABLE FOR INSULATOR
14	TIE RI 02	3	TIE RING, AERIAL CABLE FOR SPACER
15	WAS RD 004	4	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
16	WAS SP 002	2	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT